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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/700,735	11/20/2000	Boris Kolesnikov	016794/0415	8038

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EXAMINER

RHEE, JANE J

ART UNIT

PAPER NUMBER

1772

DATE MAILED: 09/11/2002

9

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Applicati n No.

09/700,735

Applicant(s)

KOLESNIKOV ET AL.

Examiner

Jane J Rhee

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 15-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 29-30 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.
2. Claim 1 rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Applicant claims that the fiber layers do not pass through transitional section but then further explains that the fibers extend into the transitional section, applicant needs to clarify further the positioning of the fibers and transitional section.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 15-23 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable by Uden et al. (4673606) in view of Goodwin (3758234).

Uden et al. discloses a composite material article comprising a fiber composite section having an axial direction (figure 2 number 5); a connecting section for connecting the composite material article to another (figure 2 number 1), and a transitional section located in the axial direction between the fiber composite section and the connecting section (figure 2), wherein the fiber composite section comprises a plurality of layers each comprising a polymer matrix and fibers embedded in the polymer matrix (figure 2 number 5 and col. 3 line 16-17), wherein the connecting section comprises a plurality of layers including at least some layers comprised of a reinforcement material and at least some layers comprised of some of the fiber layers which extend from and pass through the transitional section into the connecting section (figure 2 numbers 1 and 5), wherein the transitional section comprises a structure in which, between the fiber layers which pass through the transitional section, at least some of the layers in the connecting section which comprise the reinforcement material extend into the transitional section and terminate at first termination points within the transitional section, at least some of the fiber layers in the fiber composite section do not pass through the transitional section but rather extend into the transitional section and terminate at second termination points within the transitional section (figure 2). Uden et al. discloses that the connecting sections comprise alternating fiber layers, which pass through the transitional section, and the layers comprised of the reinforcement

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material (figure 2 numbers 1 and 5). Uden et al. discloses that the reinforcement material is comprised of metal layers (col. 2 lines 14-15). Since Uden et al. discloses the same fiber layers desired by the applicant it is inherent that the fiber layers have a fiber orientation direction producing the strongest effect with respect to the main tensile load of ht composite.

Uden et al. fail to disclose that the layers that extend into the transitional section abut against each other at abutment points located at first and second termination points. Uden et al. fail to disclose that the abutment points are axially offset with respect with each other in the transitional section. Uden et al. fail to disclose that starting from the fiber composite in the transitional section, abutment points are initially formed between the reinforcement material and fiber layers. Uden et al. fail to disclose that the fiber layers of the fiber composite and abutment points are arranged symmetrically with respect to the center plane of the thickness of the fiber composite. Uden et al. fail to disclose that the alternating fiber layers and the layers comprised of the reinforcement material all have the same layer thickness.

Goodwin teaches that the layers extend into the transitional section abut against each other at abutment points located at first and second termination points (figure 2 number 29), that the abutment points are axially offset with respect to each other in the transitional section (figure 2 number 29), that starting from the fiber composite in the transitional section, abutment points are initially formed between the reinforcement material and fiber layers (figure 2 number 29) and that the fiber layers of the fiber composite and abutment points are arranged symmetrically with respect to the center

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plane of the thickness (figure 2 and col. 2 lines 55-59) for the purpose to form a good key attachment of the fiber reinforced material to the reinforcement (col. 3 line 31-33). Goodwin teaches that the alternating fiber layers and the layers comprised of the reinforcement material all have the same layer thickness (col. 3 lines 34-36) for the purpose to ensure good matching of the core and the reinforcement (col. 3 line 35-36).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to have provided Uden et al. with the layers that extend into the transitional section abut against each other at abutment points located at first and second termination points, the abutment points that are axially offset with respect to each other in the transitional section, the abutment points and the fiber layers that are initially formed between the reinforcement material starting from the fiber composite in the transitional section, and the fiber layers of the fiber composite and abutment points that are arranged symmetrically with respect to the center plane of the thickness in order to form a good key attachment of the fiber reinforced material to the reinforcement (col. 3 line 31-33) as taught by Goodwin.

Furthermore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to have provided Uden et al. with the alternating fiber layers and the layers comprised of the reinforcement material that all have the same layer thickness in order to ensure good matching of the core and the reinforcement (col. 3 line 35-36) as taught by Goodwin.

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4. Claims 23-26 and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uden et al. in view of Goodwin and in further view of Willard et al. (EP 0783960).

Uden et al. and Goodwin discloses the composite article described above. Uden et al. and Goodwin fail to disclose that the fiber layers which pass through the transitional section are formed with a fiber direction which as a 0 degree direction with respect to the tensile load and a proportion of layers in the fiber composite is provided with a 90 degrees, -45 degrees or +45 degrees orientation. Uden et al. and Goodwin fail to disclose that the fiber layers having an oblique fiber orientation each rest directly against a fiber layer having the mirror-image symmetrical orientation with respect to the axial direction, wherein both fiber layers together have the thickness equal to one layer having 0 degree or 90 degrees fiber orientation direction. Uden et al. and Goodwin fail to teach the fibers in the first fiber layer extend in a direction different from fibers in a second fiber layer, and that the connecting section and the transitional section have essentially the same cross section size and configuration. Uden et al. and Goodwin fail to disclose that the fiber layers and the layers comprised of the reinforcement material having a layer thickness of between .2 and 1mm.

Willard et al. teaches that the fiber layers which pass through the transitional section, proportion of layers in the fiber composite is provided with a 0 degree, 90 degrees, and/or +/- 45 degrees orientation (col. 8 lines 38-50), that the fiber layers having an oblique fiber orientation each rest directly against a fiber layer having the mirror-image symmetrical orientation with respect to the axial direction, wherein both

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fiber layers together have the thickness equal to one layer having 0 degree or 90 degrees fiber orientation direction (figure 5), the fibers in the first fiber layer extend in a direction different from fibers in a second fiber layer (col. 8 line 50-54), and that the connecting section and the transitional section have essentially the same cross section size and configuration for the purpose of providing the structure with a low density, high strength, high modulus, tailorable structure that has exceptional fatigue resistance and excellent thermal-mechanical endures properties (col. 4 lines 22-25). Willard et al. teaches the fiber layers and layers comprised of the reinforcement material having a layer thickness of between 0.2 and 1mm (col. 3 lines 15-19) for the purpose of producing a light weight structure (col. 4 lines 22-23).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to have provided Unden et al. and Goodwin with the fiber layers which pass through the transitional section, proportion of layers in the fiber composite is provided with a 0 degree, 90 degrees, and /or +/- 45 degrees orientation, and the fiber layers having an oblique fiber orientation each rest directly against a fiber layer having the mirror-image symmetrical orientation with respect to the axial direction, wherein both fiber layers together have the thickness equal to one layer having 0 degree or 90 degrees fiber orientation direction, the fibers in the first fiber layer extend in a direction different from fibers in a second fiber layer (col. 8 line 50-54), and that the connecting section and the transitional section have essentially the same cross section size and configuration in order to provide the structure with a low density, high



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strength, high modulus, tailorable structure that has exceptional fatigue resistance and excellent thermal-mechanical endures properties (col. 4 lines 22-25).

Furthermore, it would have been obvious to one of ordinary skill in the art to provide Uden et al. and Goodwin with fiber layers and layers that are comprised of the reinforcement material having a layer thickness of between 0.2 and 1mm in order to produce a light weight structure (col. 4 lines 22-23) as taught by Willard et al.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

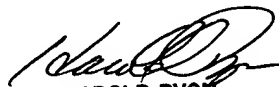
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jane J Rhee whose telephone number is 703-605-4959. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on 703-308-4251. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Jane Rhee  
September 9, 2002

  
HAROLD PYON  
SUPERVISORY PATENT EXAMINER  
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